DEC STD 178-1 Digital Marking Requirements for Piece Parts

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ABSTRACT: This standard specifies the marking requirements necessary to identify piece parts designed by Digital Equipment Corporation. These piece parts may be manufactured or purchased by Digital. The requirements must appear in the documentation for the part. This standard also specifies marking requirements for supplier-designed parts where specific markings are required. These requirements must appear in the purchase specification for the parts.

APPLICABILITY: This standard is mandatory for Design Engineering, Component Engineering, Specification Control, Engineering Services/Design Drafting, and Manufacturing. The responsible engineer is responsible for specifying whether a part should be marked and for specifying the appropriate marking in the documentation.

STATUS: APPROVED 14-May-1992; use VTX SMC for current status.

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1 INTRODUCTION

This standard describes the piece part marking information required by Digital Equipment Corporation for traceability and part identification. The engineer responsible for the part determines the marking required, how the part is to be marked, and documents that information. This applies whether the part is Digital-designed or supplier-designed.

2 PART MARKING REQUIREMENTS

Generally, parts should be individually marked with the following sequence of information.

1. Manufacturer's symbol or code
2. Manufacturer's plant or site identifier, if more than one exists
3. The Digital part identifier (2-5-2 part number and part revision defined by *DEC STD 012-0 Part Identification Standard*),
   or
   supplier part number, see subhead 2.2.2
4. For plastic parts, the Digital plastic material identifier (3-4-3 number) defined by *DEC STD 076-0 Plastics Selection and Identification*
5. The Digital finish and color number (3-4-3 number) defined in *DEC STD 092-4 Finish and Color Standard—Approved Finish Specifications*
6. Serial number, date code, or lot number where applicable
7. Cavity number for molds, castings, and so on where applicable
8. Test house and/or regulatory approval marks

   Refer to EL-CP414-00, *International Regulatory Symbols*.

   Various components that are employed in the prime alternating current (ac) area either require agency approval as individual components or require *approval in application.* Contact your product safety representative.
9. Additional regulatory information where piece parts are part of subassemblies or completed products that have additional marking requirements. See *DEC STD 178-2 Digital Marking Requirements for Subassemblies: Field Replaceable Units (FRU) and Non-Field Replaceable Units*, and *DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to Be Sold*, for requirements.

Regardless of the marking process, when the part number and part revision are used they must be readable and must be displayed in a character combination using numbers, letters, spaces, and punctuation. Bar coding may be used in addition to this marking. Refer to *DEC STD 047-0 Bar Code Symbology*.

NOTE

Part marking need not be visible after assembly.

2.1 DIGITAL PART NUMBER AND REVISION ARRANGEMENT

The preferred arrangement of the Digital part number and revision, and the order of precedence for alternatives to be used when there is not enough space available for the preferred arrangement, is shown in the following examples.

The order of precedence is:

1. 70-12345-01 Rev A01
   This format is preferred when space is available.
2. 70-12345-01.A01
   Omit *Rev* and replace it with a period. (This is the first alternative when space limitations exist. If the period is illegible, use alternative 3.)
3. 70-12345-01A01
   Omit *Rev* and the period (second alternative).
4. 701234501A01
   Omit *Rev*, hyphens, and the period (third alternative).
5. 1234501A01
   Omit part class, *Rev*, the period, and all hyphens (fourth alternative).
6. A01
   Show only the part revision (last alternative).

2.2 SOURCE MARKING

The following subheads describe the source marking.

2.2.1 Digital

For Digital manufacturing source identification, refer to *DEC STD 031-2 Product Serialization—Site Codes*.

2.2.2 Supplier

The supplier source marking shall include the supplier name or symbol.

If this does not uniquely identify the specific manufacturing site and location, then the following additional marking is required.

a. Coded identification, such as USA Federal Suppliers Code for Manufacturers (FSCM)

b. Manufacturer's own site code

c. Manufacturer's location in plain text

d. Any other suitable means of identifying that unique location, where applicable

2.3 PART MARKING EXCEPTIONS

Parts shall be individually marked, except for the following.

a. Parts that are too small or have no suitable surface for marking

b. Parts whose electrical or functional characteristics would be adversely affected by marking, such as using an adhesive-backed paper tag that would insulate a conductive surface

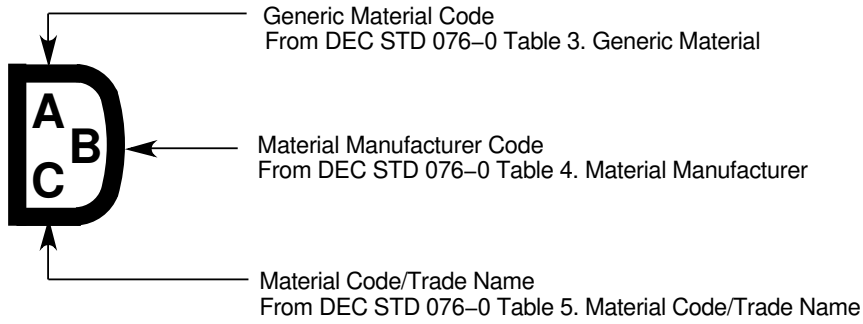
c. Parts whose price would increase beyond reasonable limits because of marking

Parts that are not individually marked shall be identified by marking on tags or containers that are used for packaging or storing those parts, such as marking on packing slips.

2.3.1 PART MARKING EXCEPTIONS FOR SMALL PLASTIC PARTS

On plastic parts that are too small to be marked with the information specified in heading 2, the following mark shall be used. Refer to Figure 1. The mark may be made as small as necessary as long as the information (characters) contained within the mark remains legible.

Figure 1: Part Marking For Small Plastic Parts


A
B
C
Generic Material Code
From DEC STD 076–0 Table 3. Generic Material
Material Manufacturer Code
From DEC STD 076–0 Table 4. Material Manufacturer
Material Code/Trade Name
From DEC STD 076–0 Table 5. Material Code/Trade Name

2.4 SERIAL NUMBERS

In those instances where it is necessary to serialize piece parts, refer to *DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to be Sold* for appropriate information.

3 PART MARKING METHODS

The following subheads describe part marking methods.

3.1 DIRECT APPLICATION TO PART

Any of the following methods may be used to apply marking information: stencil; silk screen; rubber stamp; cast or molded; electrical or chemical etch; engraving; hot die stamp; impression stamp; wraparound, adhesive-backed, or other type of tag; or decal.

NOTE

The marking process shall in no way affect the performance or repairability of the part.

3.2 CONTAINER LABELING FOR PIECE PARTS

In some cases where small parts, such as hardware or small electrical components, cannot be marked or tagged, container labeling may be necessary. In such cases, if the container contains more than one part, the marking requirement shall also include shipment quantities.

4 PERMANENCE AND LEGIBILITY REQUIREMENTS

The marking shall be as permanent and legible as the normal life expectancy of the part to which it is applied and shall be capable of withstanding the environmental tests and cleaning procedures specified for that part. Identification tag marking, when used, shall be permanent to the extent required for the use of the part.

5 DOCUMENTATION REQUIREMENTS

The documentation shall specify the required marking on the part. It will also specify the following.

a. Location of marking (dimension only if necessary)

b. Color of marking (contrasting black or white preferred, with red, orange, and yellow to be reserved for warning signs)

c. Special process requirements

Examples of the marking notes on engineering drawings are as follows.

Stamp Digital part number and revision approximately where shown using gothic characters in contrasting black.

Mark Digital part number, revision, and supplier identification approximately where shown using gothic black characters.

NOTE

If the part is marked by stamping, molding, casting, or the like, it is not necessary to add ink or paint as an additional operation.

6 CAUTION OR WARNING MARKING

Various components and piece parts are required to be marked to provide warning or cautionary information for maintenance personnel.

To fulfill transportation requirements, it is often necessary to clamp or retain portions of the product. This is often done with *shipping brackets*. These shipping brackets must be removed prior to operating the product. To assist in the identification of the location of these brackets during system installation, they shall be distinctly colored. The color to be used will be Chinese Red, 92-000-095, or a reasonable facsimile thereof.

While the marking itself must appear on the finished product, it may be applied either by our Manufacturing group or by the supplier. This decision is left to the discretion of Design Engineering, Component Engineering, Purchasing, and Manufacturing. If it is to be applied by a supplier, the marking requirement must be included in the purchase specification.

6.1 CRT MARKING REQUIREMENTS

In the case of cathode ray tube (CRT) suppliers, a notice indicating implosion protection as well as tube type should be affixed to the tube.

The mandatory label requirements for CRT marking consists of the following.

a. Supplier name or symbol

b. Supplier part number

c. Date code

d. UL file number

e. CSA designation

f. Caution label with the following message:

   High vacuum picture tube is dangerous to handle. Refer servicing to qualified service personnel.

   Use suitable translations as appropriate. See *DEC STD 178-7 Translations*.

g. Warning label with the following message:

   This picture tube employs integral implosion protection. Replace with a tube of the same type number for continued safety.

   This message in other national languages is required for every country in which the product is intended to be sold. For translations, refer to DEC STD 178-7.

It is recommended that the Digital part number and revision be affixed to the CRT. The Digital part number is required to appear on the shipping container of the CRT.

6.2 RADIATION SHIELD LABELS

An additional warning message may be required if the anode voltage is of sufficient value (over 20 kV). If the tube design is such that X-rays can be emitted above the safety limits defined in *DEC STD 119-1 Digital Product Safety—Design Criteria* for radiation hazards, the tube must carry the following warning notice.

Special shield precautions against x-ray radiation may be needed.

The shields or guards that are incorporated into the design to limit the radiation and that must be removed to perform service operations must be marked with the following warning to convey this information to the service personnel.

Danger — Removal of this shield may release harmful radiation. Always replace shield after servicing.

For appropriate translations, refer to DEC STD 178-7.

6.3 LITHIUM BATTERIES

Lithium batteries shall be marked with the following information:

a. Supplier name or symbol

b. Supplier part number

c. Warning label with the following message:

WARNING—Risk of fire, explosion, and burns. Do not recharge, disassemble, heat above 100°C (212°F), or incinerate.

Following are exceptions to these requirements.

Exception No. 1—A cylindrical battery that is smaller in capacity than 300 milliampere hours and coin, button and pin batteries are not required to be marked if tests indicate these risks are not obtained.

Exception No. 2—A battery found not to present a risk under one or more of the specified conditions need not be marked for that condition.

Exception No. 3—A battery that is between 300 and 950 milliampere hours in capacity may be marked with the word *WARNING* and an abbreviated statement such as:

Risk of explosion. Do not recharge, open, or heat. Do not dispose of in fire.

If space does not permit markings on the battery, this marking may be on the smallest unit package.

6.4 FURTHER INFORMATION

For further information, refer to DEC STD 178-2.

APPENDIX A REFERENCED DOCUMENTS

A.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00012-00	*DEC STD 012-0 Part Identification Standard*
EL-00031-02	*DEC STD 031-2 Product Serialization - Site Codes*
EL-00047-00	*DEC STD 047-0 Bar Code Symbology*
EL-00076-00	*DEC STD 076-0 Plastics Selection and Identification*
EL-00092-04	*DEC STD 092-4 Finish and Color Standard - Approved Finish Specifications*
EL-00119-01	*DEC STD 119-1 Digital Product Safety - Design Criteria*
EL-00178-02	*DEC STD 178-2 Digital Marking Requirements for Subassemblies: Field Replaceable Units (FRU) and Non-Field Replaceable Units*
EL-00178-03	*DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to be Sold*
EL-00178-07	*DEC STD 178-7 Translations*
EL-CP414-00	*International Regulatory Symbols*

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